

SUPPORT FOR THE AMENDMENT

Claim 10 was previously canceled.

Claims 1 and 14 have been amended.

The amendment of Claim 1 is supported by original Claims 1 and 14. The amendment of Claim 14 is supported by original Claims 1 and 14, as well as the specification at page 10, lines 32-34.

No new matter is believed to have been added by entry of this amendment.

REMARKS

Claims 1-9 and 11-31 are pending in the present application.

Applicants respectfully request reconsideration of the application, as amended, in view of the following remarks.

The present invention as set forth in **Claim 1** relates to a process for producing a three-dimensional object, comprising:

a) providing a layer of pulverulent substrate, wherein the pulverulent substrate contains about 0.05 to about 5% by weight of a flow aid,

b) selectively applying at least one microwave-absorbing first susceptor to one or more regions of the substrate, wherein the one or more regions are selected in accordance with a cross section of the three-dimensional object, wherein the first susceptor comprises a member selected from powders of metals or metal compounds, ceramic powders, graphite, activated charcoal, or one or more protic liquids selected from saturated monohydric linear aliphatic alcohols, polyhydric linear aliphatic alcohols, monohydric branched aliphatic alcohols, polyhydric branched aliphatic alcohols, monohydric cyclic aliphatic alcohols or polyhydric cyclic aliphatic alcohols, each undiluted, or in a mixture with water,

c) treating the layer at least once with microwave radiation, to melt the one or more regions containing the first susceptor to the layer of pulverulent substrate, and, optionally, to melt the one or more regions containing the first susceptor with other regions located in one or more substrate layers situated thereunder, thereabove, or combinations thereof, wherein, said other regions optionally contain a microwave-absorbing second susceptor, and wherein said first susceptor and said second susceptor are the same or different, and

d) cooling the layer.

Applicants respectfully submit that Dorscher et al and Lause et al do not affect the patentability of Claim 1 or the claims dependent therefrom.

The rejection of Claims 1-9, 11-19 and 26-31 under 35 U.S.C. §103(a) over Dorscher et al in view of Lause et al is obviated in part by amendment and is respectfully traversed.

In the outstanding Office Action, the Examiner maintains that the present invention is obvious in view of Droscher et al in view of Lause et al. It should be noted that Droscher et al corresponds to DE 197 27 677, which is discussed on page 2, lines 10-16 of the specification. Droscher et al discloses a method of generating prototypes, by exposing selected regions of pulverulent layers to a focused microwave beam. The controlled microwave beam bonds the exposed pulverulent substrates within a layer, and also bonds these substrates to the pulverulent substrates in the layer situated thereunder. Bonding takes place via adhesive bonding, sintering, or fusion. This process also requires complicated technology in order to ensure that the microwave radiation reaches only the selected regions.

In the present invention, the inventors were able to provide a simplified method that would be able to be performed by simple microwave radiation means (e.g., a microwave oven found in most kitchens). The improvement in the present invention over the state of the art represented by Droscher et al lies in the specific selective application of one or more microwave-absorbing susceptors to one or more regions of the substrate. Thus, whereas the pulverulent substrate absorbs microwave radiation only poorly or not at all, the susceptor(s) absorbs the radiation and passes the energy absorbed in the form of heat to the substrate surrounding the susceptor(s). In the present invention, the susceptors are described on page 14, lines 3-16 as including: pulverulent substances, e.g., metal powders, metal compounds, ceramic powders, graphite, carbon black, activated charcoal, water or protic liquids selected

from the group consisting of saturated mono- or polyhydric linear, branched, or cyclic aliphatic alcohols, or mixtures thereof, each undiluted, or mixed with water (see also previously pending Claim 10).

As recognized by the Examiner, Droscher et al do not explicitly teach selectively applying at least one microwave-absorbing first susceptor to one or more regions of a substrate. However, the Examiner references column 5, lines 9-12 of Droscher et al as disclosing the use of water as a thermal transmitter to improve heat flow.

The Examiner explains that Lause et al is cited as disclosing applicant of at least one microwave absorbing first susceptor (e.g., carbon black) to one or more regions of a substrate. Accordingly, the Examiner concludes that it would have been obvious to combine the disclosures of Droscher et al and Lause et al “principally in order to generate sufficient heat to fuse the particulate material and form the desired product.” The Examiner also cites *KSR International Co. v. Teleflex Inc.*, 550 U.S.\_\_\_\_, 82 USPQ2d 1385 (2007) and alleges that “the substitution of one known material (i.e., a thermal transmitter such as carbon black) for another known material (i.e., a thermal transmitter such as water) would have yielded predictable results (e.g., thermal transmission when a material is heated by a microwave source, as taught by both Droscher et al and Lause et al) to one of ordinary skill in the art at the time the inventions was made.” Applicants disagree.

First, it should be noted that Lause et al only use the term “water” in the following sentence appearing at column 8, line 68 to column 9, line 4: “Such lenses are typically made from poly(methyl methacrylate) by adhesively bonding appropriately colored and water-white lens components, but the resulting adhesively bonded structure is weaker than one which is M-welded.” Certainly this disclosure of Lause et al with respect to water is inconsistent with the use of water as “a thermal transmitter for improving heat flow.”

Similarly, Droscher et al disclose the use of water only in a very limited capacity. Specifically, Droscher et al only disclose the use of water at column 5, lines 9-12 stating “In substrates which are not attacked by water, water adhering can act as a thermal transmitter and thus further improve the heat flow.” It should be noted that at column 5, lines 7-9, and column 5, lines 65-67, Droscher et al specifically warn of the dangers of using water and actually teach away from its use in certain circumstances.

Even, *arguendo*, the artisan were to only look to the disclosure of Droscher et al that the Examiner relies upon (i.e., that water can act as a thermal transmitter), it is important to understand the context of which this reference is made. Specifically, in this context, water is at best used over the entire surface in the cited art. Such a use is in direct contrast with the claimed invention where the first susceptor is applied selectively by, for example, printing. Accordingly, even if Droscher et al and Lause et al are combined, the claimed invention would not be apparent to the skilled artisan.

Moreover, Claim 1 as presently amended requires that the pulverulent substrate, contains about 0.05 to about 5% by weight of a flow aid. Applicants submit that neither Droscher et al nor Lause et al disclose or suggest the presence of a flow aid in the pulverulent substrate in the amount recited. As such, for this additional reason the claimed invention is not obvious in view of the combined disclosures of Droscher et al and Lause et al.

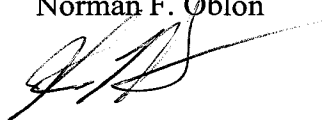
Accordingly, Applicants submit that Droscher et al and Lause et al fail to render the claims as amended obvious. Withdrawal of this ground of rejection is requested.

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Applicants submit that the application is now ready for allowance, and early notification of such action is earnestly solicited.

Respectfully submitted,

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